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1993 Statistical Report

Sexually Transmitted Disease Services

CANADIANA

APR 22 1997

Alberta
HEALTH

For additional copies of this report, contact:
Sexually Transmitted Disease Services
Alberta Health
4th Floor, 10105 – 109 Street
Edmonton, Alberta T5J 1M8
(403) 427-2830

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Executive Summary

Sexually Transmitted Disease (STD) Services provides a comprehensive program for the control of STD in Alberta. The list of notifiable STD includes non-gonococcal urethritis/ mucopurulent cervicitis (NGU/MPC), *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, syphilis, chancroid, and lymphogranuloma venereum.

Diagnostic and treatment services are available through clinics in Calgary, Edmonton, and Fort McMurray (operated under the auspices of the Fort McMurray Health Unit). An Education Unit is responsible for the dissemination of STD/ HIV/AIDS information to both public and professional audiences. A Clinical Investigation Unit actively participates in STD related research. STD Services also provides consultation to physicians as well as epidemiologic services that include partner notification for STD including HIV infections.

Over the past five years, the incidence of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* has shown dramatic declines of 66% and 38% respectively. For 1993 the incidence rate of *Neisseria gonorrhoeae* is 31 per 100,000 population and *Chlamydia trachomatis* is 196 per 100,000 population. The highest incidence for these two infections continues to be young women aged 15-19 and 20-24 followed by males aged 20-24. Services, both clinical and educational, have been targeted for these age groups and have resulted in proportional decreases in disease incidence. The street outreach project undertaken in the Edmonton area at the end of 1992 was successful in bringing the outbreak of penicillinase producing *Neisseria gonorrhoeae* under control. However 68% of the incidents of PPNG in 1993 did not relate to transmission from an endemic area and demonstrates the potential for a recurrence. The incidence of syphilis remains very low and there were only six cases of infectious syphilis in 1993.

After a dramatic increase in clinic attendance during 1992 associated with increased media awareness of HIV, clinic attendance showed a slight overall decrease of 4% in 1993. However the clinic in Calgary showed an increase of just less than 3%, due to an increase in return of former patients. HIV-related concern is the most common reason that patients were seen at both the Calgary and Fort McMurray clinics and the second most common reason in Edmonton. HIV visits for women increased 3-4% in both Calgary and Edmonton despite the overall decrease in attendance.

Disease prevention and health promotion education related to STD was facilitated by the Education Unit. This is done by direct education sessions and a telephone information system. Seven hundred and thirty six presentations were made to individuals and groups, a number similar to the previous year. The toll-free, computer-answered STD/HIV/AIDS information line handled 30,645 calls. This was an 8% reduction in the number of calls from 1992 and is likely a result of no major media awareness programs in 1993. In addition the nurses responded directly to 10,784 telephone calls for information on STD/HIV/AIDS.

The Clinical Investigation Unit, with a staff complement of one laboratory technician and a clinical research nurse completed a successful year of operation contributing to improved diagnosis and management of STD through research.

Consultation to physicians and epidemiologic services, including contact tracing for STD as well as HIV infections was provided collaboratively by the central control office in Edmonton, the clinics and the mobile unit.

Incidence of *Neisseria gonorrhoeae*

Neisseria gonorrhoeae demonstrated a 32% decrease in rate from 45.8 per 100,000 population in 1992 to 31.2 per 100,000 population in 1993. This is a decrease of 343 cases.

The highest age and gender specific rate continues to be young women aged 15-19 with a rate of 195.4 per 100,000 population. This is followed by females aged 20-24 and males aged 20-24 with rates of 133.9 per 100,000 population and 122.4 per 100,000 population respectively.

Proportional declines are seen in every age and gender group with a dramatic 58% decrease in those under age 15. Decreases of 11%, 14%, and 21% are seen in males aged 15-19, 20-24 and females aged 20-24 respectively. These decreases are less than the overall decrease in disease incidence. The 1:1 ratio of male to female cases remains unchanged.

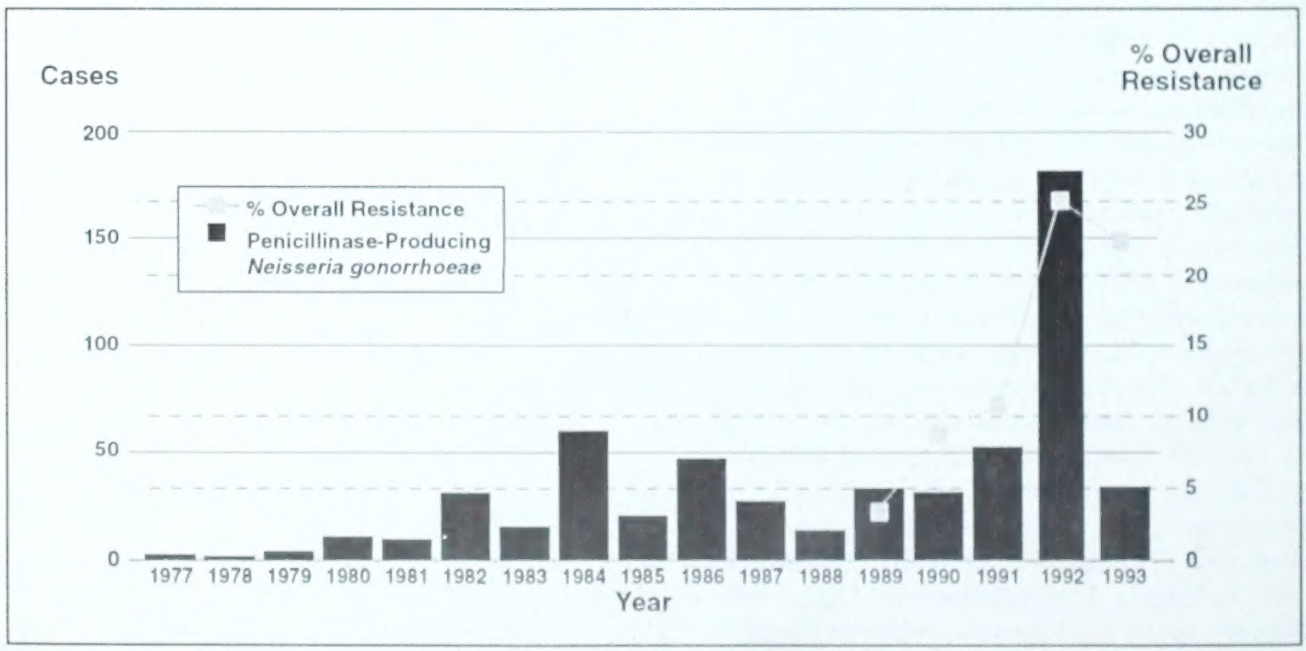
Overall resistance to antibiotics decreased from 25% in 1992 to 22% in 1993. This is associated with a return to a comparable number of cases of penicillinase producing *Neisseria gonorrhoeae* (PPNG). There were 34 cases of PPNG of which 11 were related to transmission from an endemic area. Sensitivity to penicillin, tetracycline, and ciprofloxacin was known for 96% of the isolates. To date there have been five isolates with intermediate resistance to ciprofloxacin and no resistant isolates.

■ Table 1: *Neisseria gonorrhoeae* Cases and Rates by Age and Sex, Alberta, 1993

	Male		Female		Total	
Age	Cases	Rate*	Cases	Rate*	Cases	Rate*
< 1						
1 - 4		0.3	1	4.0	1	2.1
5 - 9	1				1	
10 - 14			11		11	
15 - 19	92	95.6	179	195.4	271	144.3
20 - 24	123	122.4	131	133.9	254	128.1
25 - 29	77	67.8	45	41.3	122	54.9
30 - 39	93	35.8	28	11.3	121	23.8
40 - 59	40	13.4	7	2.5	47	8.1
60+	1	0.6		0	1	0.3
Age not stated			2		2	
Total	**427**	**31.8**	**404**	**30.6**	**831**	**31.2**

*Rate per 100,000 population

■ Figure 1: Cases of Penicillinase-Producing *Neisseria gonorrhoeae* (PPNG) in Alberta, 1977 – 1993



Incidence of Syphilis

The overall incidence of syphilis declined 28% from a rate of 3.9 per 100,000 population in 1992 to 2.8 per 100,000 population in 1993. The rates for males and females are similar. In contrast to other STD, the highest age and gender specific rates are found in males and females over age 60 with a rate of 8.4 per 100,000 population and 7.0 per 100,000 population respectively. There were no cases in males under age 25. Four of the five cases in females under age 25 were late latent disease.

Six cases of infectious syphilis, the same number as the previous year, were reported. Five of the cases of infectious syphilis were in males between the ages of 25 and 59 and one in a female aged 20-24.

There were three cases of neurosyphilis and no cases of congenital syphilis. One of the three cases of neurosyphilis is known to be HIV positive. The HIV status of the other two cases is unknown.

■ Table 2: Syphilis Cases and Rates by Age and Sex, Alberta, 1993

	Male		Female		Total	
Age	Cases	Rate*	Cases	Rate*	Cases	Rate*
15 - 19			1	1.1	1	0.5
20 - 24			4	4.1	4	2.0
25 - 29	6	5.3	2	1.8	8	3.6
30 - 39	6	2.3	8	3.2	14	2.8
40 - 59	15	5.0	6	2.1	21	3.6
60+	13	8.4	13	7.0	26	7.6
Total	**40**	**3.0**	**34**	**2.6**	**74**	**2.8**

*Rate per 100,000 population

Incidence of *Chlamydia trachomatis*

Chlamydia trachomatis is the most common sexually transmitted bacterial pathogen. The rate of 195.6 per 100,000 population is a 21% decrease from the previous year. Since *Chlamydia trachomatis* became reportable in 1988, there has been a gradual decrease in incidence. This likely reflects the education initiatives and early identification and treatment that has been targeted at individuals at greatest risk of acquiring the infection.

Similar to *Neisseria gonorrhoeae*, the highest age and gender specific rates are found in young women aged 15-19 and 20-24 followed by males aged 20-24. Decreases of 18%, 23%, and 22% in these age groupings reflect the overall reduction in incidence.

The ratio of disease in women compared to men is 3.3:1 and is unchanged from 1992. This is likely due to increased screening in women when they access health care for another reason such as birth control counselling and routine medical examinations. As well, symptomatic males or sexual partners of females with *Chlamydia trachomatis* are often treated without testing.

The 11 reports of children under age 1 can be attributed to perinatal transmission. Although this number is 21% less than the previous year, it is still an indication that screening and treating of pregnant women at risk in the third trimester is important. The two reports in children between 1 and 9 years of age demonstrates a decrease of 60% from 1992.

■ Table 3: *Chlamydia trachomatis* Cases and Rates by Age and Sex, Alberta, 1993

	Male		Female		Total	
Age	Cases	Rate*	Cases	Rate*	Cases	Rate*
< 1	7		4		11	
1 - 4		3.8	1	30.1	1	16.6
5 - 9	1				1	
10 - 14	4		86		90	
15 - 19	240	249.5	1654	1805.7	1894	1008.5
20 - 24	474	471.6	1463	1495.9	1937	976.8
25 - 29	277	244.1	491	450.9	768	345.3
30 - 39	149	57.4	262	105.3	411	80.8
40 - 59	41	13.8	39	13.7	80	13.7
60+	2	1.3	3	1.6	5	1.5
Age not stated	2		8		10	
Total	**1197**	**89.2**	**4011**	**303.6**	**5208**	**195.6**

*Rate per 100,000 population

Incidence of Non-gonococcal Urethritis/ Mucopurulent Cervicitis (NGU/MPC)

There was an increase of 131 cases of NGU/MPC in 1993. However the rate remained stable at 132.4 per 100,000 population. The highest age and gender specific rates are found in males 20-24 and 25-29. The incidence in males aged 20-24, with a rate of 733.3 per 100,000 population, increased by 6%. There is a significant difference in incidence rates between males and females. The overall incidence of NGU in males is 184.01 per 100,000 population whereas the incidence of MPC in females is only 79.9 per 100,000 population.

Physicians recognize and diagnose an STD in the symptomatic male more readily than in the asymptomatic female. This is demonstrated by the male to female ratio of 2.3:1 in contrast to *Chlamydia trachomatis* where the male to female ratio is 1:3.3 and *Neisseria gonorrhoeae* with a 1:1 ratio.

■ **Table 4: Non-gonococcal Urethritis/Mucopurulent Cervicitis Cases and Rates by Age and Sex, Alberta, 1993**

	Male		Female		Total	
Age	Cases	Rate*	Cases	Rate*	Cases	Rate*
10 - 14	5	4.9	15	15.5	20	10.1
15 - 19	273	283.8	304	331.9	577	307.2
20 - 24	737	733.3	335	342.5	1072	540.6
25 - 29	532	468.7	179	164.4	711	319.7
30 - 39	631	243.0	159	63.9	790	155.3
40 - 59	212	71.2	45	15.8	257	44.1
60+	25	16.1	2	1.1	27	7.9
Age not stated	53		17		70	
Total	**2468**	**184.0**	**1056**	**79.9**	**3524**	**132.4**

*Rate per 100,000 population

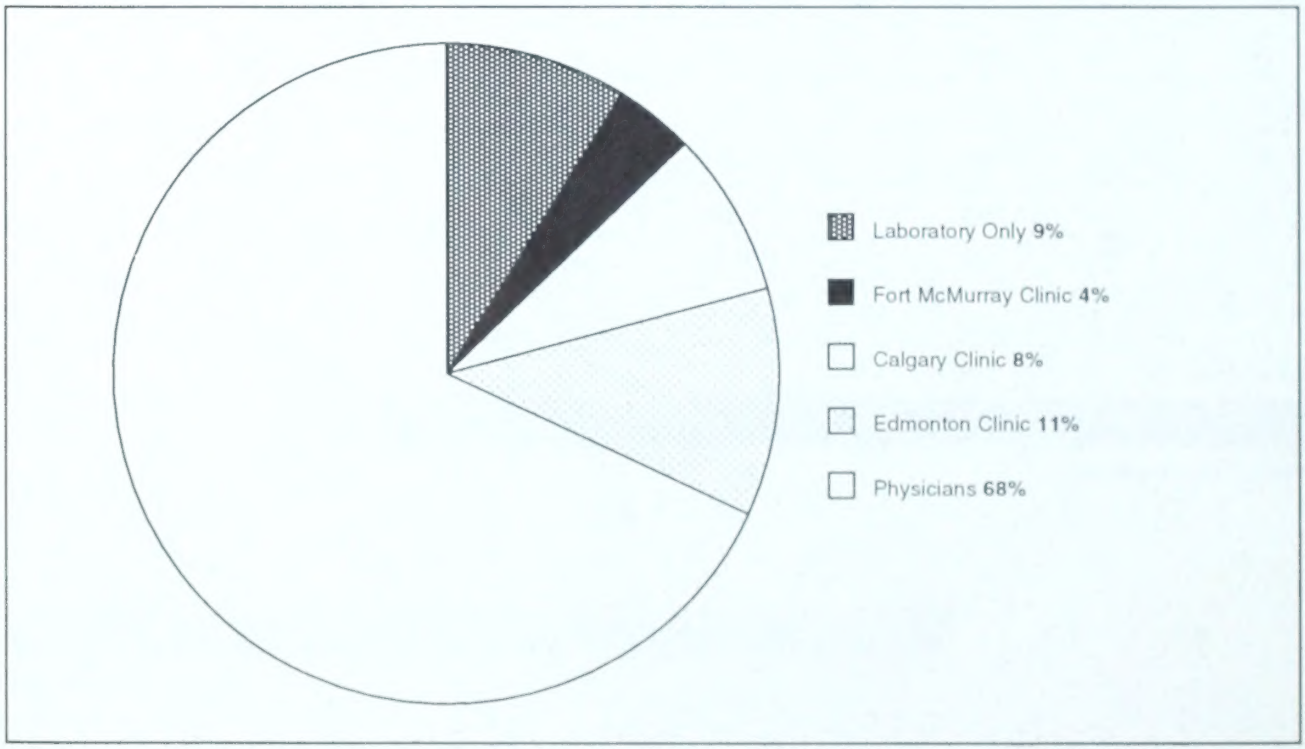
Notification by Reporting Agency

The number of physicians' reports are much lower when compared to 1992 because of the new format in displaying them. This year physicians' reports are divided into two categories: "Physicians," reflecting receipt of notification forms plus laboratory confirmation; and "Laboratory Only," which reflects a positive laboratory report but no notification from a physician. In 1993, the STD clinics reported 23% of the cases of *Neisseria gonorrhoeae* and 11% of *Chlamydia trachomatis* with physicians reporting 68% and 81% respectively. Reporting for 9% of the cases of *Neisseria gonorrhoeae* and 8% of the cases of *Chlamydia trachomatis* was by the laboratory only.

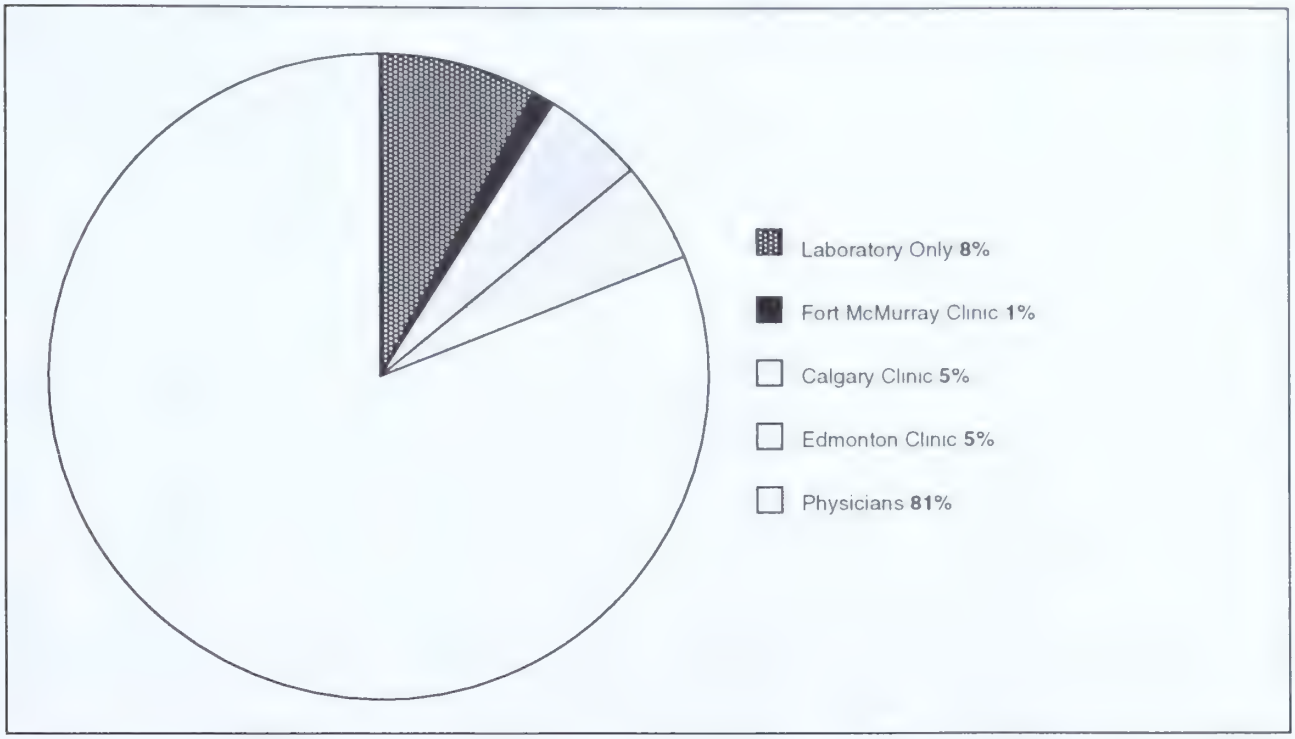
Physicians reported 88% of their patients who tested positive for *Neisseria gonorrhoeae* in 1993 compared to 83% reporting rate for the previous year. Physicians reported 90% of their patients who tested positive for *Chlamydia trachomatis*, compared to a 93% reporting rate in 1992. This level of reporting indicates good partnership between STD Services and the physicians in Alberta in the control of STD.

In contrast to both *Neisseria gonorrhoeae* and *Chlamydia trachomatis*, the clinics reported 57% of the cases of nongonococcal urethritis/ mucopurulent cervicitis whereas physicians reported 43%. This reflects the difficulties encountered with syndromic reporting compared to reporting organism specific disease.

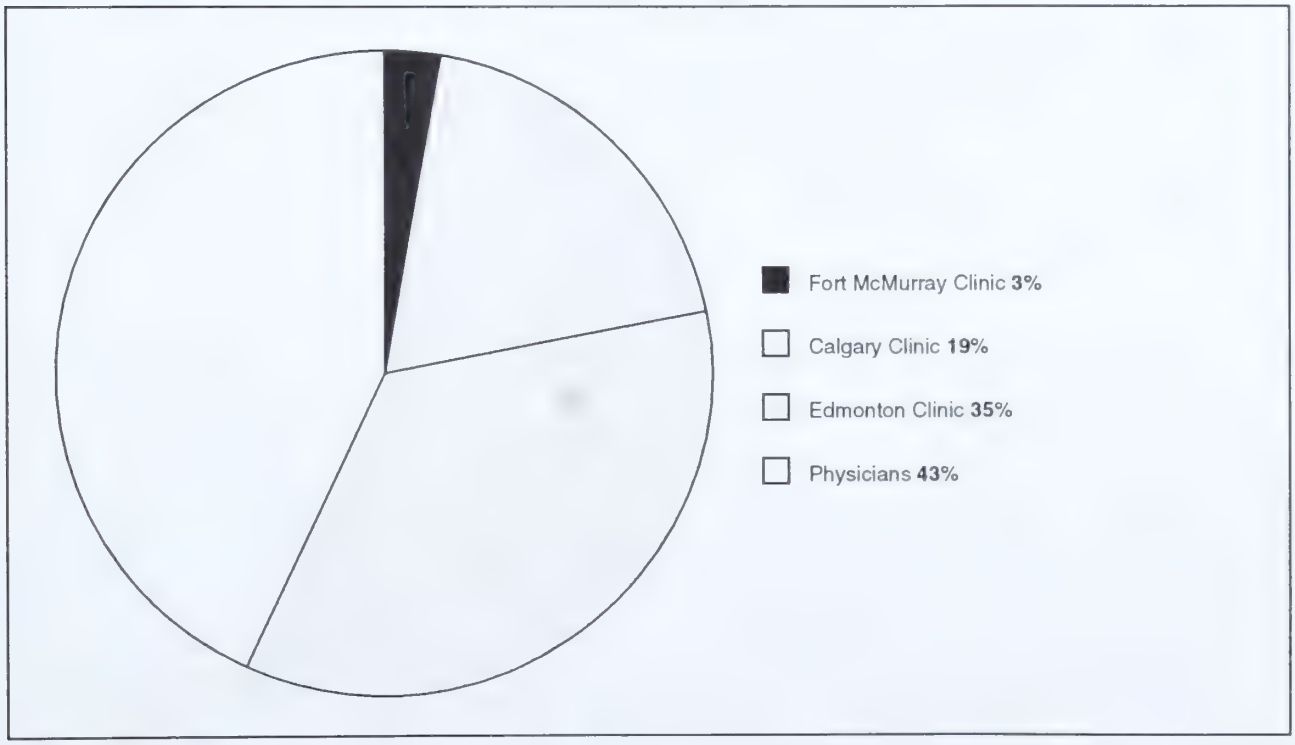
■ Figure 2: Percentage of Reported Cases of *Neisseria gonorrhoeae* by Reporting Agency, Alberta, 1993



■ **Figure 3: Percentage of Reported Cases of *Chlamydia trachomatis* by Reporting Agency, Alberta, 1993**



■ **Figure 4: Percentage of Reported Cases of Non-gonococcal Urethritis/Mucopurulent Cervicitis by Reporting Agency, Alberta, 1993**

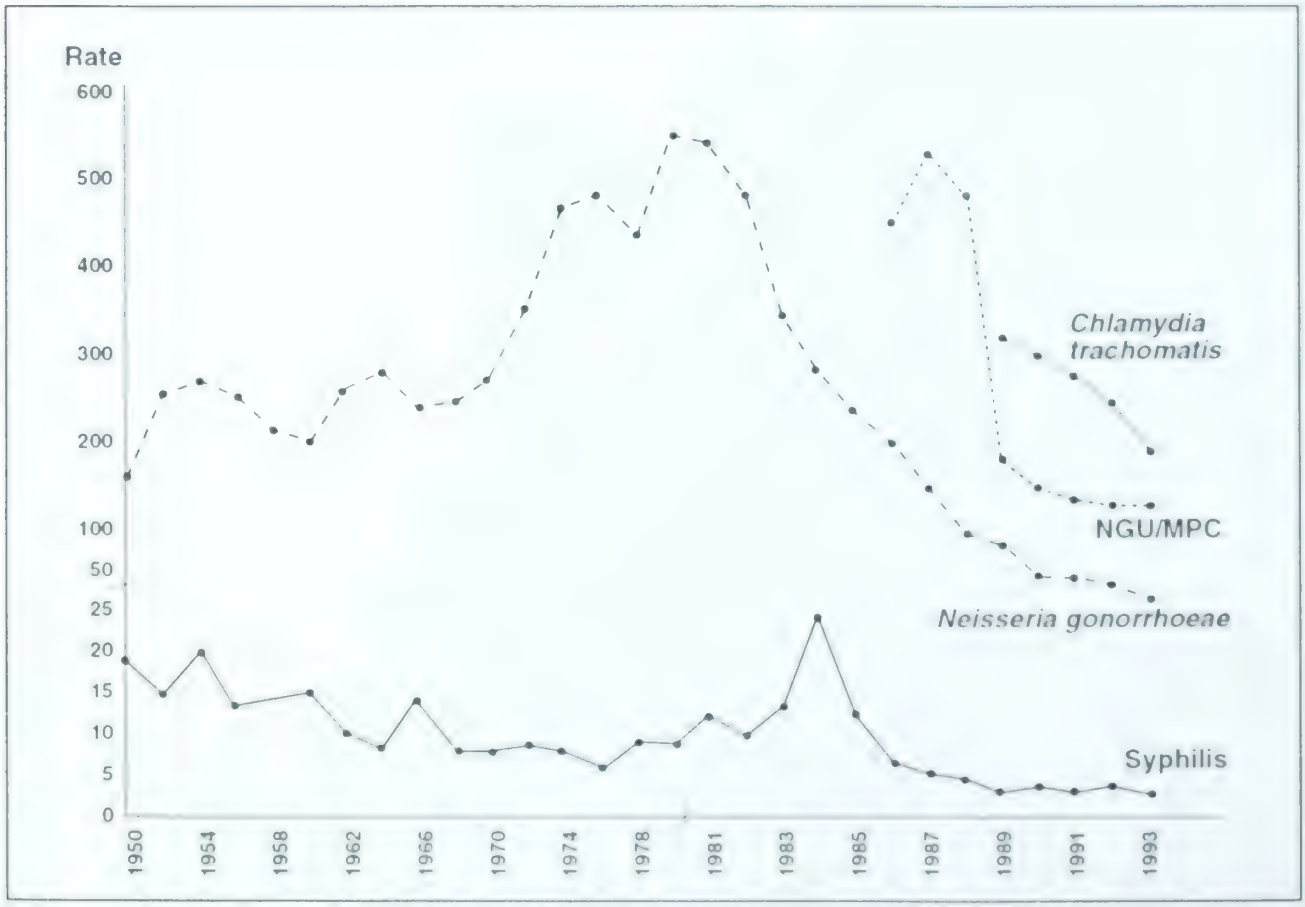


Trends in Sexually Transmitted Disease Since 1950

The incidence of the traditional STD (*Neisseria gonorrhoeae, Chlamydia trachomatis* and syphilis) continues to show dramatic decreases yearly. In the past five years, *Neisseria gonorrhoeae* and *Chlamydia trachomatis* have declined 66% and 38% respectively. As well, the incidence of syphilis has declined from a high of 23.9 cases per 100,000 population in 1984 to 2.8 per 100,000 population in 1993. These numbers reflect the level of control of STD that has been achieved. However the real incidence of STD is underestimated due to the large number of non-notifiable diseases. Infections such as Herpes simplex and Human papilloma virus (venereal warts) likely occur with greater frequency than the traditional STD but as they are not notifiable, the numbers are unknown.

Antibiotic resistance to *Neisseria gonorrhoeae* remains high at 22% in 1993, even with a dramatic decrease in the incidence of penicillinase producing *Neisseria gonorrhoeae*. There were only 34 cases of penicillinase producing *Neisseria gonorrhoeae* in 1993, compared to 184 in the previous year. Twenty three of 34 cases (68%) were not related to transmission from an endemic area and indicate a potential for another outbreak as was experienced in 1992.

■ Figure 5: Incidence Rates per 100,000 Population for Syphilis, *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and Non-gonococcal Urethritis/Mucopurulent Cervicitis, Alberta, 1950 – 1993



■ Table 5: Syphilis, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, Non-gonococcal Urethritis/ Mucopurulent Cervicitis Cases and Rates per 100,000 Population, Alberta, 1950 – 1993

	Gonorrhoeae		Syphilis		NGU/MPC		Chlamydia	
Year	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
1950	1981	152.0	165	18.1				
1952	2450	251.8	135	13.9				
1954	2819	266.7	212	20.1				
1956	2842	253.0	145	12.9				
1958	2548	211.3	167	13.8				
1960	2560	198.3	186	14.4				
1962	3560	260.0	134	9.8				
1964	3953	276.7	110	7.7				
1966	3447	235.7	208	14.2				
1968	3729	244.4	118	7.7				
1970	4290	268.1	134	8.0				
1972	5842	353.2	143	8.6				
1974	8036	466.9	136	7.8				
1976	8657	480.3	108	5.7				
1978	8451	430.9	165	8.4				
1980	11474	547.8	181	8.6				
1981	11692	540.2	255	11.8				
1982	11066	476.3	225	9.7				
1983	8021	339.7	306	13.0				
1984	6712	279.9	574	23.9				
1985	5690	233.1	290	11.9				
1986	4991	203.0	162	6.7	11051	448.7		
1987	4107	146.9	132	5.5	12753	527.9		
1988	2536	104.2	110	4.6	11567	475.5		
1989	2217	91.2	74	3.0	4277	175.9	7727	318.0
1990	1380	55.9	90	3.6	3693	149.5	7412	300.1
1991	1393	55.2	73	2.9	3386	134.3	6936	275.1
1992	1174	45.8	100	3.9	3393	132.3	6335	247.0
1993	831	31.2	74	2.8	3524	132.4	5208	195.6

Human Immunodeficiency Virus (HIV) Serologic Testing

HIV seropositivity is not a notifiable condition in Alberta. Serologic testing for HIV is performed by the Provincial Laboratories of Public Health in Edmonton and Calgary and the laboratories of the Canadian Red Cross Blood Transfusion Service. These laboratories report non-nominal epidemiologic information to Communicable Disease Control and Epidemiology of Alberta Health.

The number of serologic tests performed at the Provincial Laboratories increased 6% from 1992; however, seropositivity declined, reflecting increased testing of individuals at lower risk. Red Cross screening identified only one infected individual.

Homosexual men continue to comprise the largest group of seropositive individuals, but the cumulative percent positive for this group continues its decline and fell a further 1.5% in 1993. A decrease was also observed for recipients of blood and blood products. For the first time since 1988, the number of reactive serologies attributable to heterosexual transmission decreased. However, the cumulative percent positive continues to increase. Injection drug users, who demonstrate the second highest risk factor, showed the greatest increase of 27%.

A cumulative total of 150 samples from females have been found to be positive. Since reporting is non-nominal, this does not necessarily indicate 150 infected individuals. No risk information was available for 23 females. Of the remaining 127 females, 122 were adults and five were infants. Of the adult females, 66 acquired infection through heterosexual contact, 19 through receipt of blood or blood products, 31 by injection drug use, 5 from an endemic area, and the remaining female was classified as "other" risk. In 1993, two female infants were born to seropositive mothers, bringing this cumulative total to five.

The self selection of those seeking testing makes any generalizations about prevalence of HIV infection of limited value. However, the level of infection appears to be decreasing in homosexual men, but increasing among heterosexuals, females and injection drug users. Persons who engage in unprotected sexual contact with multiple partners and those who inject drugs and share needles must recognize that they are placing themselves, their sexual, needle sharing partners and unborn children at risk.

■ Table 6: HIV Serologic Testing, Alberta, 1986 – 1993

	Provincial Laboratory		Red Cross	
Year	Total Tested	Number Positive (%)	Total Tested	Number Positive (%)
1986	2156	212 (9.8)	156304	26 (0.017)
1987	12862	319 (2.5)	122443	5 (0.004)
1988	12786	232 (1.8)	123782	2 (0.002)
1989	13262	331 (2.5)	122342	6 (0.005)
1990	16612	253 (1.5)	125503	1 (0.001)
1991	25387	262 (1.0)	133444	0 (0.000)
1992	46181	307 (0.7)	126801	2 (0.002)
1993	49022	228 (0.5)	118828	1 (0.0008)
Total	**178268**	**2144 (1.2)**	**1,028,447**	**44 (0.004)**

■ Table 7: HIV Seropositivity by Risk Factor and Year, Alberta, 1986 – 1993

Risk Factor	1986	1987	1988	1989	1990	1991	1992	1993	Cumulative (%)
Homosexual	163	203	125	192	171	168	169	121	1410 (65.8)
Blood recipient	7	36	16	17	6	5	4	1	95 (4.4)
Heterosexual	0	6	4	5	10	13	57	30	109 (5.1)
Other	6	17	2	28	18	13	12	17	114 (5.3)
Injection drug use	2	5	5	8	15	27	44	52	155 (7.2)
Not stated	34	52	20	78	31	16	23	7	261 (12.2)
Total	**212**	**319**	**232**	**331**	**253**	**262**	**307**	**228**	**2144 (100)**

Acquired Immunodeficiency Syndrome (AIDS)

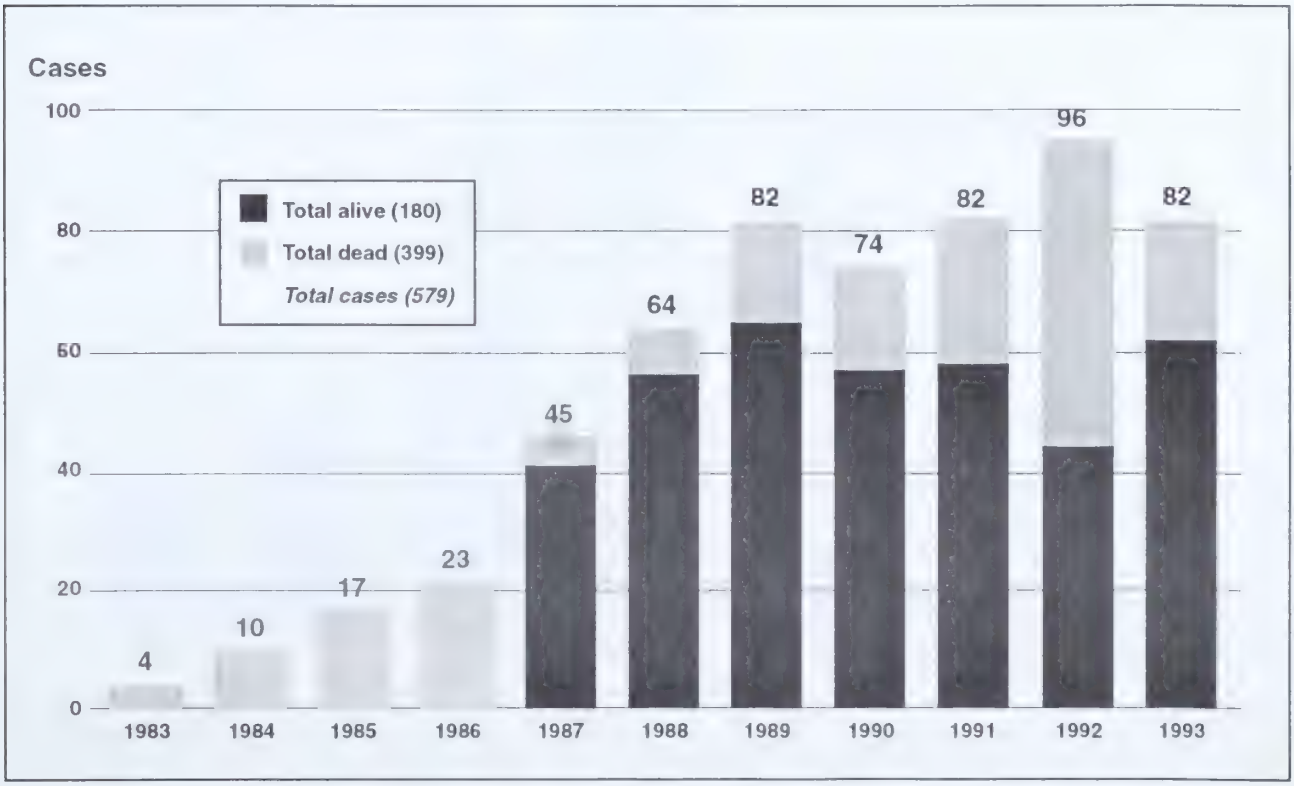
Since Alberta reported its first case of AIDS in 1983, there has been a cumulative total of 579 cases. Throughout this section, the numbers have been updated to accurately reflect previously unreported cases diagnosed in earlier years. During 1993, there were 82 new cases, a 14.6% decrease from 1992. Whether we have returned to the 1989 – 1991 plateau is too early to speculate, but this decrease is equal to the increase experienced from 1991 to 1992.

On a regional basis, Calgary continues to have the highest new and cumulative number of cases. The proportion of new cases from Calgary rose from 57% to 65%. Edmonton based cases remained stable at 30%. The age distribution of patients at diagnosis remains unchanged. As well, the primary presenting diagnosis remains unchanged and survival remains stable at 31%.

The distribution of risk behavior or exposure did demonstrate some shifts in 1993. Homosexual men accounted for 54% of new cases, a slight increase from 1992, and homosexual/bisexual/IDU males increased to 6% of new cases from 3% in the previous year. Bisexual men also demonstrated an increase in new cases from 21% to 25%. Decreases were noted for recipients of blood or blood products, heterosexuals and injection drug users. Obviously, seroconversion in the latter two groups has not yet been reflected by the onset of an AIDS defining diagnosis.

Changes are also seen when one examines cumulative cases. Decreases occurred in recipients of blood or blood products, injection drug users and homosexuals. Cumulative increases were found in heterosexual, homosexual and bisexual injection drug users and bisexuals. Bisexuals demonstrate the single activity with the greatest increase and homosexuals the greatest decrease.

■ **Figure 6: New AIDS Cases by Year of Diagnosis, Alberta, 1983 – 1993**



■ Table 8: New and Cumulative AIDS Cases by Location, Alberta, 1983 – 1993

Location	New Cases	(%)	Total Cases	(%)
Calgary	[illegible]	(64.6)	335	(57.9)
Edmonton	29	(30.2)	183	(31.6)
[illegible]*	2	(2.1)	26	(4.5)
South	3	(3.1)	35	(6.0)
Total	**96 ^**		**579**	

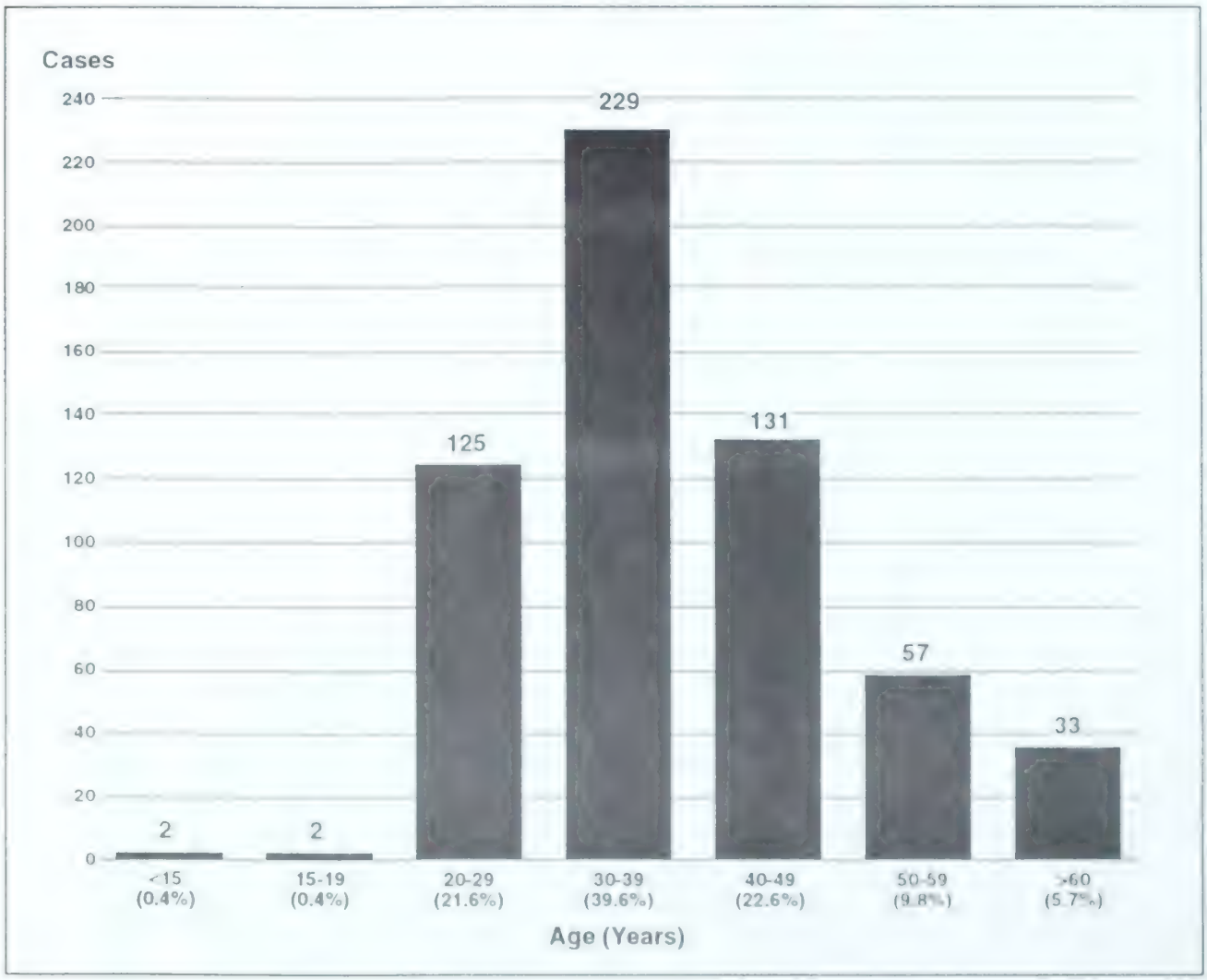
* Refers to the City of Red Deer and North excluding Edmonton

^ Although these cases were reported in 1993 only 82 have 1993 as year of onset. The remaining cases have been used to update figures from previous years.

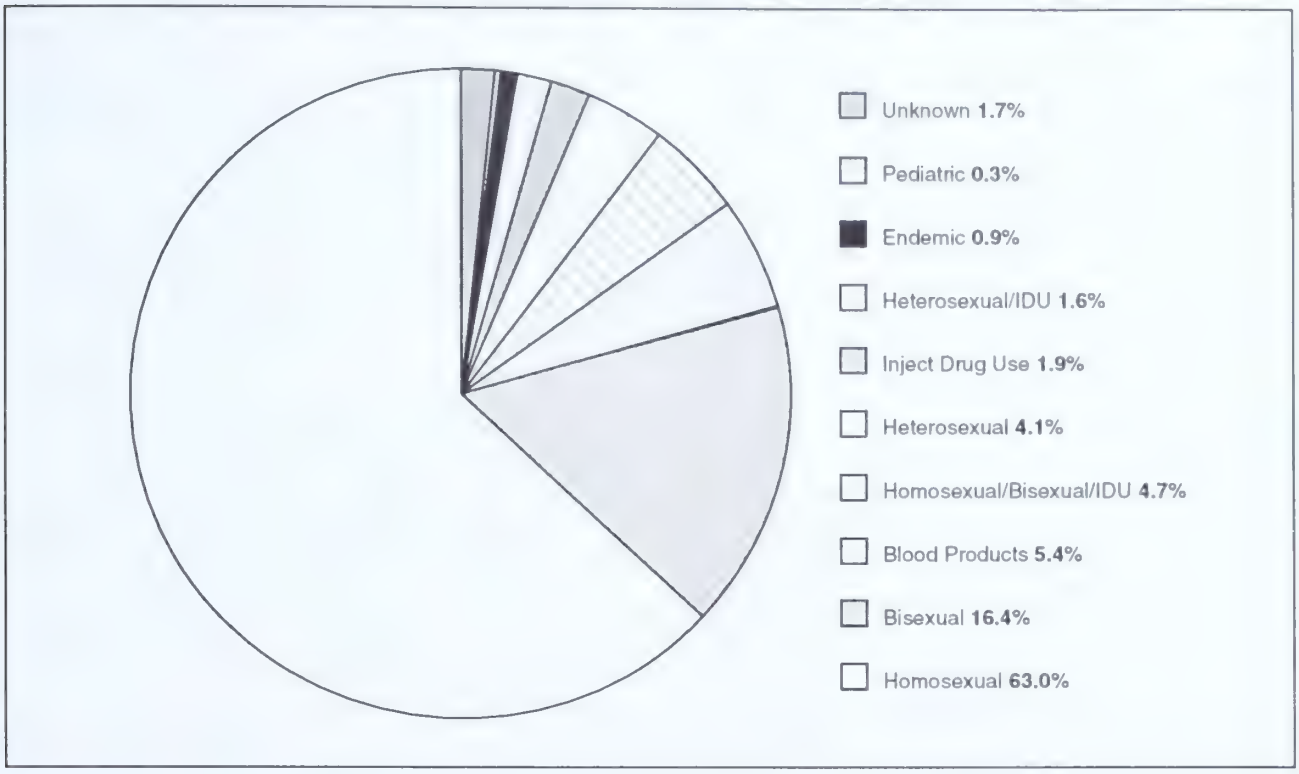
■ Table 9: AIDS Patients Primary Diagnosis and Status, Alberta, 1983 – 1993

	Total Cases		Status	
Primary Diagnosis	Number	(%)	Alive	Dead
Pneumocystis carinii pneumonia (PCP)	272	(47)	54	[illegible]
Kaposi's Sarcoma (KS)	[illegible]	(11.4)	24	[illegible]
PCP & KS	[illegible]	(2.6)	1	[illegible]
Other opportunistic infections	134	(23.1)	[illegible]	[illegible]
Other malignancies	[illegible]	(3.6)	10	[illegible]
HIV wasting	44	(7.6)	11	[illegible]
HIV encephalopathy	21	(3.6)	3	[illegible]
Other	5	(0.9)	1	4
Total	**579**		**170**	**408**

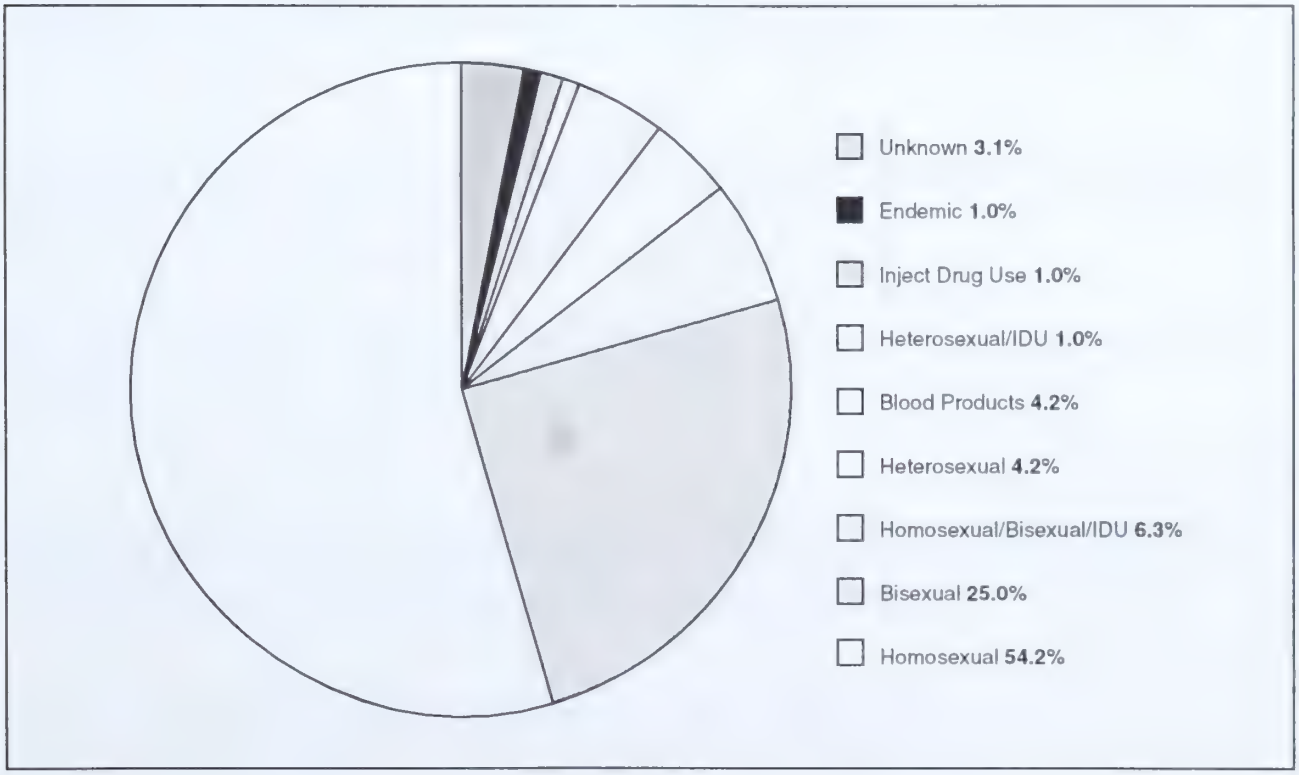
■ Figure 7: Age of AIDS Patients, Alberta, 1983 – 1993



■ **Figure 8: Cumulative AIDS Cases by Risk, Alberta, 1983 – 1993**



■ **Figure 9: New AIDS Cases by Risk, Alberta, 1993**



Contact Information and Investigations

Control of *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and syphilis is accomplished through a number of different strategies. Partner notification is one of the most important. In 1993, 81% of all partner notifications undertaken were completed successfully. There was a significant increase in the number of partner notifications by the Mobile Unit related to a research project that will be completed in 1994. Analyses of this project will be useful in evaluating the current policy on partner notification.

Partner notification is carried out on contacts listed on notifications for STD as well as from information obtained from patients seen in the STD Clinics. In 1993, there were 6676 notifications with information on 7991 contacts received. Of this number, there was sufficient information recorded to initiate an investigation in 55% of contacts. This ranged from 49% in the Edmonton Clinic to 91% in the Fort McMurray Clinic

Another important aspect in the control of STD is ensuring treatment of individuals known to be infected. An investigation is initiated for every reactive syphilis serology when there is no record of treatment. As well, individuals with laboratory confirmed *Neisseria gonorrhoeae* and *Chlamydia trachomatis* who are at greatest risk of disease sequelae and for whom treatment has not been confirmed are located and treated appropriately. There were 1634 investigations undertaken and 96% of these were completed within the year.

■ Table 10: Number of Contacts Listed on Notifications Received for Confirmed Cases of *Neisseria gonorrhoeae*, NGU/MPC, *Chlamydia trachomatis* and Syphilis, Alberta, 1993

Reporting Agency	Notifications Received with Contact Information	Contacts with Sufficient Information for Investigation	Total Number of Contacts Named	(%)
Physicians	3980	4642	2581	(56)
Edmonton Clinic	1560	1925	948	(49)
Calgary Clinic	971	1228	676	(55)
Ft. McMurray Clinic	165	196	179	(91)
Total	**6676**	**7991**	**4384**	**(55)**

■ Table 11: Number and Outcome of Investigations Carried Out by Sexually Transmitted Disease Clinics, Alberta, 1993

	Contact Investigations				Positive Tests* Investigations		
Clinics	Located	Closed/Unlocated	Remaining Open	Total	Completed	Remaining Open	Total
Edmonton	344 (76)	99	10	453	477	15	492
Calgary	345 (91)	32	1	378	510	9	519
Ft. McMurray	87 (89)	7	4	98	32	6	38
Mobile	514 (78)	33	112	659	615	39	654
Total	**1290 (81)**	**171**	**127**	**1588**	**1634**	**69**	**1703**

*Follow-up to positive laboratory reports

STD Clinics — Patient Services

Although there was a slight overall decrease (4%) in clinic attendance in 1993, Calgary saw 3% more patients than in 1992. This was due to an increase in return of former patients as new admissions decreased. Both Edmonton and Fort McMurray recorded a decrease in patient visits at 9% and 11% respectively. The male: female ratio of patient visits remained unchanged at 1.7:1 for Edmonton and Calgary and 0.8:1 for Fort McMurray.

HIV-related visits decreased only 2%. These visits continue to account for 40% of all patient visits. HIV visits in women increased in both Edmonton and Calgary, 3% and 4% respectively. HIV testing, including pre and post test counselling, as well as continuing care for HIV positive individuals are included in the range of services under HIV-related visits.

Patient visits by STD diagnoses reflects the degree of importance that HIV plays in the clinics. HIV was the most common reason for clinic attendance in Calgary and Fort McMurray and second only to STD examination in Edmonton. STD examination represents patients concerned that they may have been exposed to a sexually transmitted disease although they are asymptomatic. Nongonococcal urethritis, mucopurulent cervicitis and *Chlamydia trachomatis* combined rated third. Increased recognition and awareness of Human papilloma virus is reflected by an overall increase in this diagnosis. However, some of this increase is related to repeat patient visits for treatment of venereal warts with cryotherapy or podophyllin. Gonorrhoea, vaginitis, Herpes simplex infection and syphilis complete the list of the 10 most common diagnoses. Among women with vaginitis, candida continues to be the most prevalent condition followed by bacterial vaginosis.

Both Edmonton and Calgary are staffed by a clinic physician. The proportion of patients seen by the physicians remained constant at 9% for Edmonton and 7% for Calgary. Although the male predominance is still striking with the male:female ratio at 5.8:1, this is almost half that recorded in 1992. Clinic physicians in both Edmonton and Calgary saw an average of 50% more females in 1993. This is largely due to the shift in the HIV epidemic from male homosexuals to heterosexuals and injection drug users.

■ **Table 12: Patient Utilization of STD Clinics, Alberta, 1993**

	New Admissions	Former Patients	Total Visits
Edmonton	3872	10858	14730
Calgary	4057	7634	11691
Fort McMurray	291	543	834
Total	**8220**	**19035**	**27255**

■ **Table 13: HIV Related visits at STD Clinics, Alberta, 1993**

	Male	Female	Total
Edmonton	3479	2002	5481
Calgary	3079	1998	5077
Fort McMurray	136	200	336
Total	**6694**	**4200**	**10894**

■ Table 14: Patient Visits by STD Diagnosis, Alberta, 1993

	Edmonton	Calgary	Ft. McMurray
HIV Related	37.2	43.4	40.3
STD examination	38.5	29.9	26.3
NGU	13.9	6.8	6.0
Human Papilloma virus	12.2	11.4	0.5
MSU	4.8	1.4	2.2
Gonorrhea	2.0	1.0	4.1
Chlamydia	2.7	3.9	1.2
Vaginitis	2.3	2.8	9.7
Herpes simplex virus	2.7	3.3	1.3
Syphilis	0.9	1.3	0.4

* Expressed as percentage of total visits

■ Table 15: STD Physician Clinic Visits, Alberta, 1993

	Physician Visits		
	Male	Female	Total
Edmonton	1170	205	1375
Calgary	706	120	826
Total	**1876**	**325**	**2201**

STD Clinics — Serologic Tests

The total number of serologic tests decreased 5%, which is in keeping with overall clinic attendance. Despite virtually no change in the number being tested for HIV, the proportion of positive results continues to decrease. The proportion positive for men has decreased from 2.2% to 1.6%. However, for women, the percent positive has remained stable at 0.3%. This reflects an increasing number of infected females because 3.9% more women were tested this year.

Hepatitis B serology decreased 5%, again in keeping with overall clinic attendance. Similarly, syphilis serology decreased by 7% and the percentage positive fell from 3.1% to 2.7%. This is consistent with the decreasing incidence of this infection.

■ **Table 16: Serologic Testing at STD Clinics, Alberta, 1993**

		Syphilis		HIV Antibody		Hepatitis B	Total
		Male	Female	Male	Female		
Edmonton	Taken	3467	2469	1382	1148	854	9320
	Positive	124 (3.6%)	46 (1.9%)	24 (1.7%)	4 (0.3%)		
Calgary	Taken	2884	1895	1329	1075	553	7736
	Positive	97 (3.4%)	36 (1.9%)	19 (1.4%)	1 (0.1%)		
Ft. McMurray	Taken	144	176	73	97	149	639
	Positive	0	0	0	0		
Total		11035		5104		1556	17695

STD Clinic — Laboratory Investigations

The most frequently performed laboratory procedures carried out in each clinic are demonstrated in the accompanying table. Each STD clinic has on-site access to microscopes. All nurses have the capability to prepare and interpret methylene blue and gram staining of urethral and endocervical smears, darkfield microscopy and wet mount examinations. All other laboratory procedures are carried out by the Provincial Laboratories in Calgary and Edmonton.

Examination of urethral smears demonstrates the prevalence of nongonococcal urethritis in relation to gonorrhoea. This rapid, simple investigation allows health care workers to easily make an accurate diagnosis. Vaginal wet mount and gram stain examinations are extremely useful in the investigation of bacterial vaginosis and candida. Trichomonas is infrequently seen with only 2% to 7% of all specimens demonstrating trichomonads.

There were few darkfield examinations carried out and none were positive. This reflects the very low incidence of infectious syphilis.

The decrease in the number of cultures obtained for gonorrhoea and chlamydia is a reflection of clinic attendance. The number of gonococcal isolates has fallen, along with the incidence of this disease. The lowest prevalence was from the Calgary Clinic, which corresponds to the low disease incidence for that geographic location. The continued isolation of *Neisseria gonorrhoeae* from male rectal specimens is very disturbing as this clearly indicates unprotected homosexual contact with its attendant high risk of HIV transmission.

The prevalence of *Chlamydia trachomatis* decreased in Edmonton and Calgary in both males and females (Edmonton: males 5% to 3.5%, females 7% to 5%; Calgary: males 7% to 6%, females 7% to 5%). Fort McMurray recorded a marked increase in male prevalence of *Chlamydia trachomatis* from 8.5% to 12%, but in females there was a decrease from 10% to 9.5%.

Specimens for Herpes simplex virus decreased overall. The proportion of positive results also decreased in all clinics for men, but remained unchanged for women.

The practice of offering women a Pap smear continues. The small decrease reflects reduced patient visits. Positive Pap smears relate to the presence of atypia, HPV effect or changes consistent with CIN I, II or III. Of all women undergoing a Pap smear, 21% to 29% demonstrated abnormalities. This reaffirms the value of undertaking this procedure.

■ Table 17: Sexually Transmitted Disease Clinic Laboratory Investigations, Alberta, 1993

		Edmonton Clinic		Calgary Clinic		Ft. McMurray Clinic		Total	
		Taken	Positive	Taken	Positive	Taken	Positive	Taken	Positive
Urethral Smear		3230		1352		183		4765	
– *Neisseria gonorrhoeae*			142		19		28		189
– Non-gonococcal urethritis			1355		530		83		1968
Wet mount/gram		1247		1547		223		3017	
Bacterial vaginosis			141		320		86		547
Candida			194		194		25		413
Trichomonas			90		24		7		121
Darkfield		19	0	1	0	0	0	20	0
Cultures — *Neisseria gonorrhoeae*									
– Male	urethra	3049	60	2545	34	177	15	5771	109
	rectal	116	4	70	1	0	0	186	5
	pharynx	578	2	274	1	5	0	857	3
	Total	**3743**	**66**	**2889**	**36**	**182**	**15**	**6814**	**117**
– Female	cervix/urethra	5145	59	2090	17	208	6	7443	82
	rectal	4690	8	1981	4	183	0	6854	12
	pharynx	724	2	211	2	4	0	939	4
	Total	**10559**	**69**	**4282**	**23**	**395**	**6**	**15236**	**98**
Chlamydia trachomatis Identification									
– Male	urethra	3447	122	2482	152	187	23	6116	297
– Female	cervix/urethra	2916	157	1960	104	220	21	5096	282
Herpes simplex virus									
– Male	urethra	204	11	11	4	0	0	215	15
	lesion	498	155	243	118	9	4	750	277
	Total	**702**	**166**	**254**	**122**	**9**	**4**	**965**	**292**
– Female	cervix	390	20	204	28	13	2	607	50
	lesion	402	85	274	80	11	3	687	168
	Total	**792**	**105**	**478**	**108**	**24**	**5**	**1294**	**218**
Pap Smear		1020	224	405	118	0	0	1425	342

Education Unit Activities

The Education Unit is responsible for STD/HIV/AIDS disease prevention and health promotion education in Alberta. The mandate is achieved through direct educational sessions for individuals and groups and by a telephone information system.

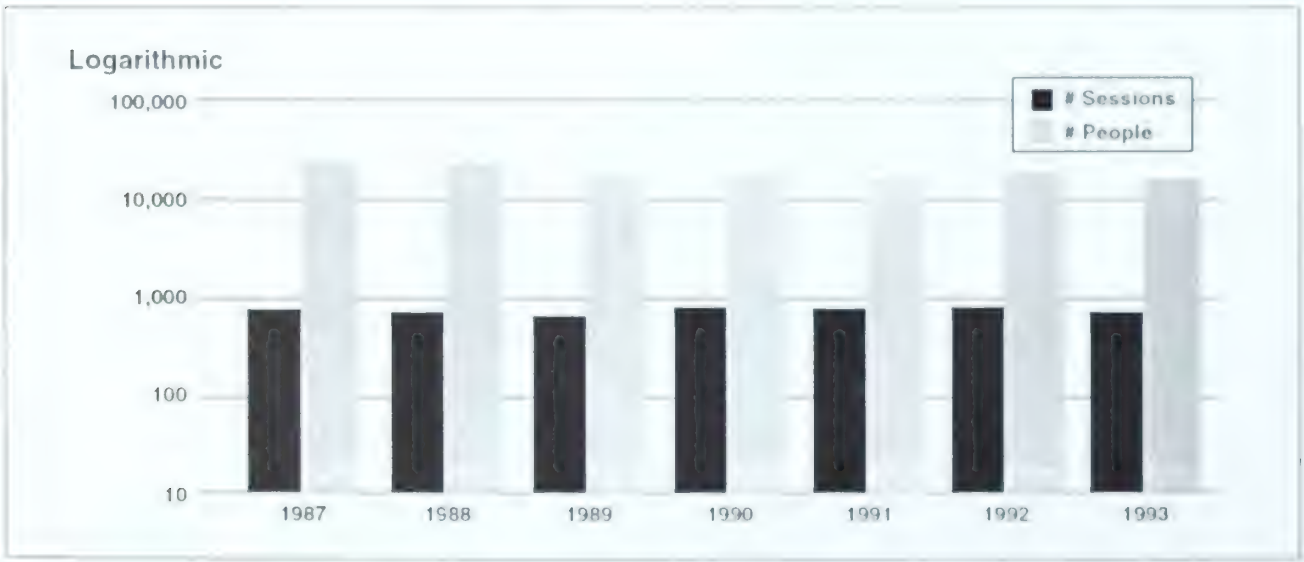
In 1993, nurse educators made 696 presentations. In addition the medical staff held 40 education/information sessions for a total of 736 sessions. The largest percentage of presentations by the nurse educators were to students (51%): 43% in elementary, junior and senior high school; and 8% post secondary. This was an increase of 15% for elementary, junior, and senior high school students and a decrease of 25% for post secondary students. Consultation for clients and professionals, including teachers and nurses, is important to reach individuals at greatest risk of acquiring an STD. This aspect of service remained stable at 15% of the total sessions. Fourteen percent of the educational sessions provided inservice to professionals. The number of sessions for life skills groups (10%), general public (5%) and correctional institutions (4%) remained unchanged from 1992.

Medical and nursing students as well as other health care professionals spent time in orientation, clinical care, epidemiology and educational programs as part of a comprehensive experience. The number of students participating increased by 24% from 1992. This increase reflects a change in nursing programs province-wide.

During 1993, Education Unit staff participated as active members of inter-agency committees in both Calgary and Edmonton. These committees dealt with STD/HIV/AIDS and sexuality issues. In collaboration with the Healthy Communities Project, a radio program was produced for the Chinese community. STD Open Houses were held in both Edmonton and Calgary and provided an excellent forum to share information regarding services with agencies in these communities.

The toll-free, computer-answered STD/HIV/AIDS information line provides 24-hour province wide coverage.* Basic information is accessed by the caller through an interactive system of prepared and recorded scripts. In 1993, there were 30,645 calls made to this line, an 8% reduction from the previous year. This reduction is most likely due to the absence of media coverage to increase public awareness of STD/HIV/AIDS. For the computer-answered line, 36% of the callers were seeking information on HIV/AIDS and 64% wanted STD information. All other information calls were answered directly by a

■ Figure 10: Education Unit, Alberta 1987 – 1993



nurse. When callers to the computer-answered line wanted more information, they called during working hours and spoke to a nurse educator. As a result, 2420 calls were made directly to the nurses, 10% fewer than in 1992. Of these callers, 48% requested HIV/AIDS information and 52% wanted STD Information.

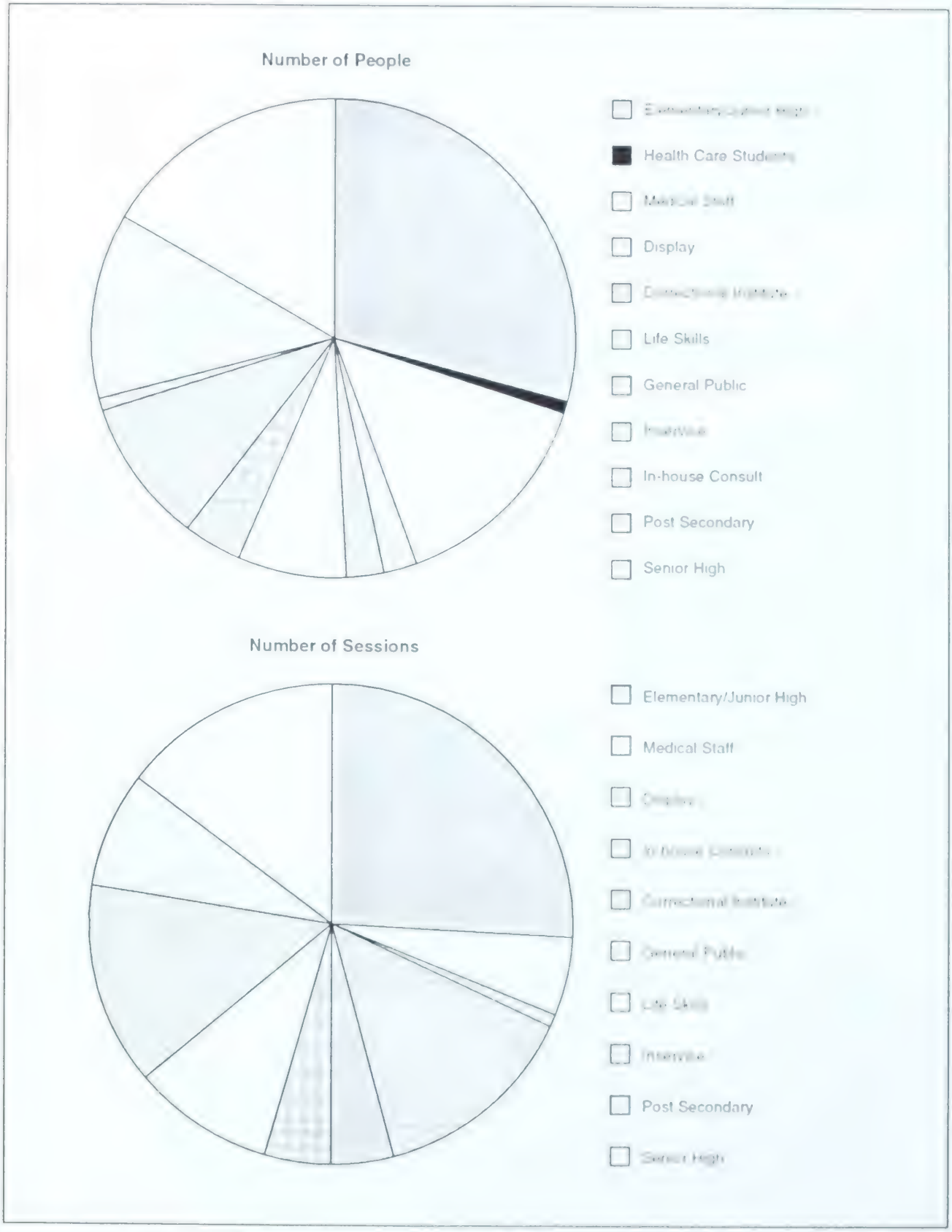
All calls to STD Services requesting information are referred to a nurse. In 1993, there were 8,364 such calls received. STD information was requested 83% of the time and HIV/AIDS information wanted for 17% of the calls. This was a 7% increase in requests for STD information. The regular and consistent use of the information lines by the public demonstrates the acceptability and accessibility of this service.

* Evaluated in 1993, report available from Provincial AIDS Program

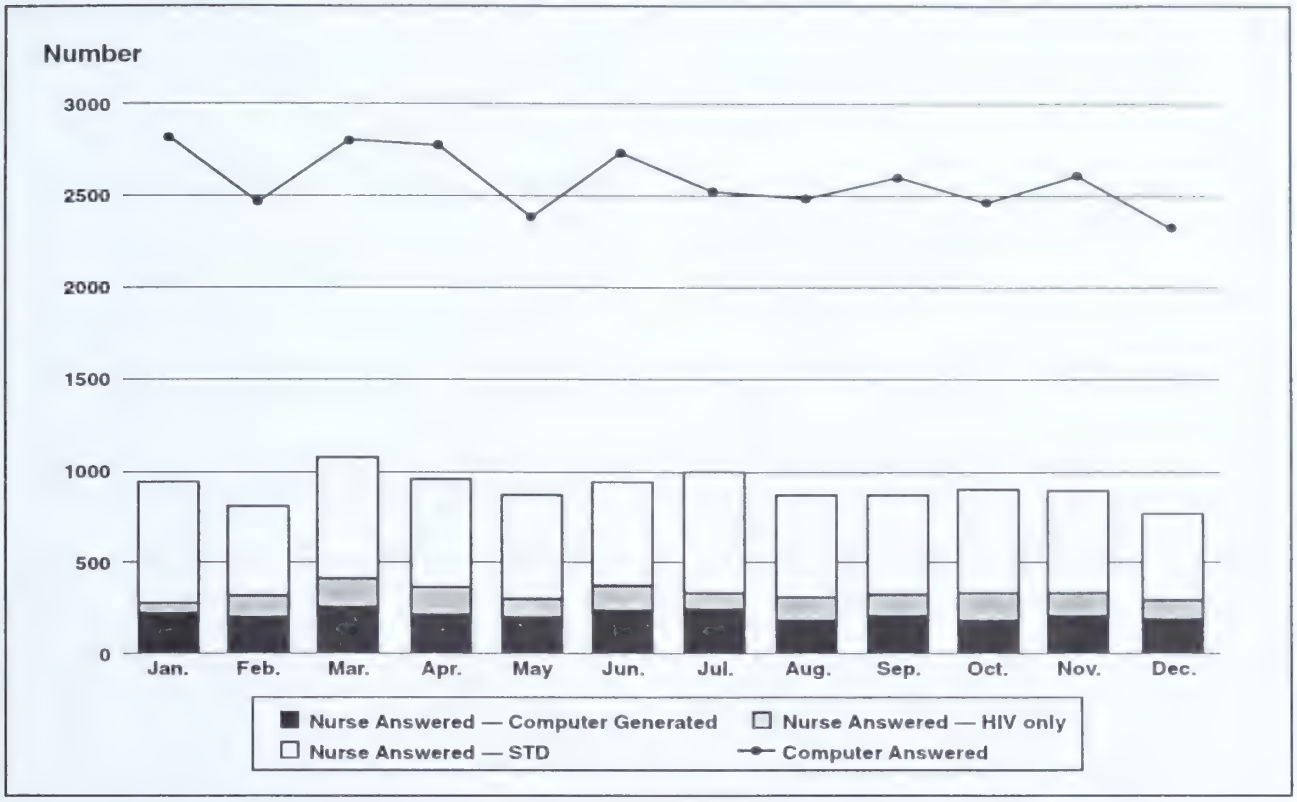
■ Table 18: Type of Education Session by Nurse Educator, Alberta, 1993

Type of Session	Number of Sessions	Number of Participants
Schools		
Elementary	1	20
Junior High	190	5192
Senior High	108	2872
Post Secondary Schools		
University/College//NAIT/SAIT	35	1653
Continuing Education	7	110
Nursing Schools	15	442
Inservice		
Hospital	39	530
Health Unit	9	125
Other Health Care Workers	17	237
Teachers	5	77
Workplace	29	739
Life Skills		
Adult	43	943
Adolescent	27	342
General Public		
Adult	30	594
Adolescent	4	122
Correctional Institutions		
Inmates	16	261
Staff	13	167
In House Consultation		
Appointments	16	38
Drop In	86	117
Displays	6	415
Professional Orientation and Clinic/Education Experience		
Medical Students		80
Nursing Students		62
Pharmacy Students		10
Total	**696**	**15,138**
Presentations by Medical Staff		
Medical Presentations	40	2586
Media Interviews	60	

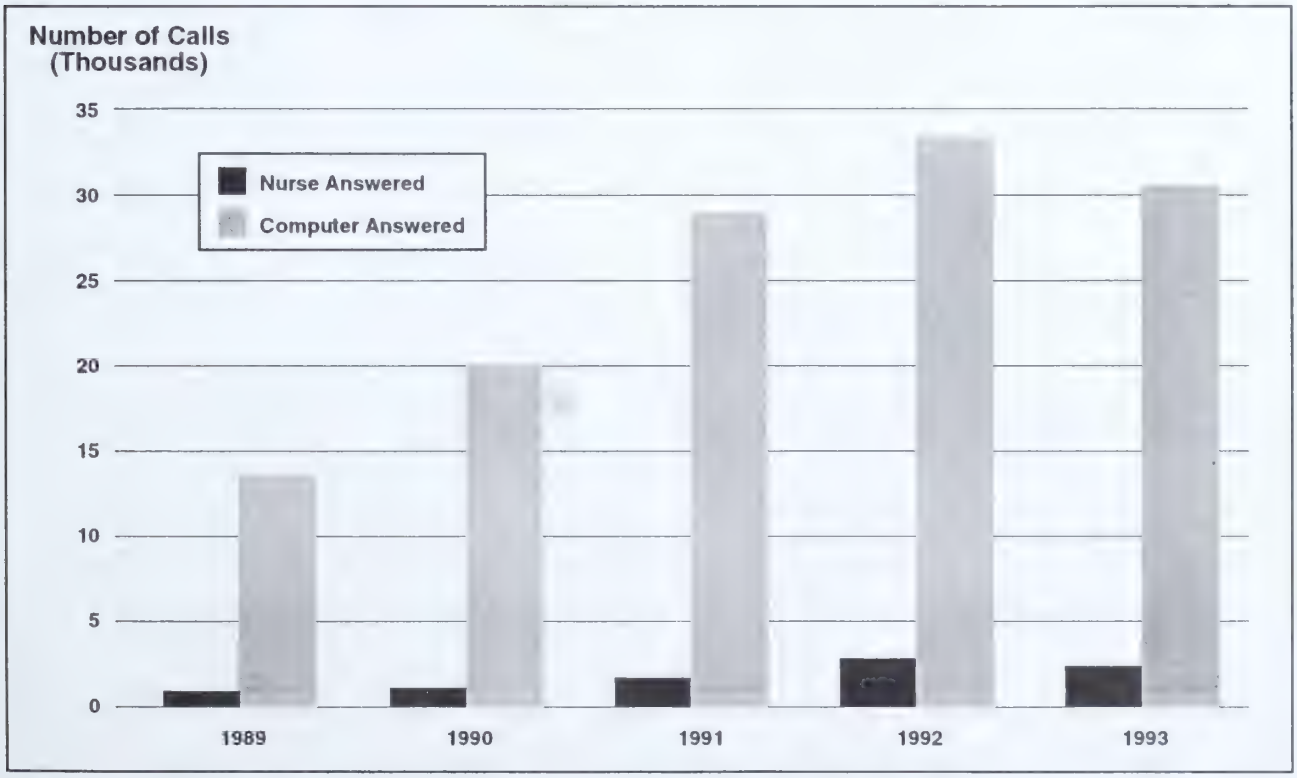
■ Figure 11: Education Unit, Alberta, 1993



■ **Figure 12: Nurse/Computer Answered Calls, Alberta, 1993**



■ **Figure 13: HIV/AIDS/STD Information Line, Alberta 1989 – 1993**



Research — Clinical Investigation Unit

During 1993, the following research projects were undertaken or completed by the clinical investigation unit and/or the STD Clinics in Edmonton and Calgary. This was an extremely busy and successful year with involvement in 23 studies compared to 11 the previous year.

Studies completed:

1. Efficacy of Oral Famciclovir in Patients with First Episode Genital Herpes Infection
   Principal Investigator — Dr B. Romanowski
   Sponsor — SmithKline Beecham Pharma
   Participation — CIU, Edmonton STD Clinic

2. Patient Initiated Dose Ranging Study to Assess the Efficacy of Oral Famciclovir in Patients with Recurrent Genital Herpes Infection
   Principal Investigator — Dr. B. Romanowski
   Sponsor — SmithKline Beecham Pharma
   Participation — CIU, Edmonton STD Clinic

3. Clinical Evaluation of Itraconazole in the Treatment of Acute Vulvovaginal Yeast Infection
   Principal Investigator — Dr. B. Romanowski
   Co-investigator — Dr. D. Megran
   Sponsor — Jannsen Pharmaceutical Inc
   Participation — Edmonton and Calgary STD Clinics, CIU

4. Evaluation of Urine Samples for *Chlamydia trachomatis* Screening
   Principal Investigator — Hazel Talbot
   Sponsor — STD Research Fund
   Participation — CIU, Edmonton STD Clinic

5. Mycoplasma Infection Among HIV Seropositive Individuals as determined by Serodiagnosis – a Pilot Project
   Principal Investigator — Dr. J. Robertson, Medical Microbiology and Infectious Diseases, University of Alberta
   Participation — Edmonton STD Clinic, CIU

6. National *Neisseria gonorrhoeae* Surveillance Study
   Principal Investigator — National Laboratory for STD, LCDC, Ottawa
   Participation — Edmonton and Calgary STD Clinics, CIU, Provincial Laboratories of Public Health Northern and Southern Alberta

7. Comparison of Clinical and Gram Stain Diagnosis of Bacterial Vaginosis and Analysis of Factors Affecting Gram Stain Specificity
   Principal Investigator — Dr. D. Megran
   Co-investigator — Dr. H. Sims
   Participation — Calgary STD Clinic and Calgary General Hospital Microbiology Laboratory

8. Comparison of ADI Chlamydia EIA Versus Pathfinder/Kallestad /Cell Culture
   Principal Investigator — Mr. E. Prasad
   Provincial Laboratory of Public Health Northern Alberta
   Participation — Edmonton STD Clinic, Provincial Laboratory of Public Health Northern Alberta

9. Chlamydia Kallestad/Syva Confirmatory Test in Males
   Principal Investigator — Mr. E. Prasad, Provincial Laboratory of Public Health Northern Alberta
   Participation — Edmonton STD Clinic, Provincial Laboratory of Public Health Northern Alberta

10. Review of HIV Infected Patients with Atypical Mycobacterial Infection
    Principal Investigator — Patricia Campbell
    Co-investigator — Dr. B. Romanowski
    Participation — CIU, Edmonton STD Clinic

11. Evaluation of Street Outreach to Control Beta Lactamase Positive *Neisseria gonorrhoeae*
Principal Investigator — Dr. B. Romanowski
Co-investigators — Ruth Sutherland, Mary Rafter
Participation — Edmonton STD Clinic, Provincial STD Program, Provincial Laboratory of Public Health Northern Alberta

12. *Chlamydia trachomatis* and *Neisseria gonorrhoeae* Gen — Probe Study
Principal Investigator — Dr. Kevin Fonseca, Provincial Laboratory of Public Health Southern Alberta
Participation — Calgary STD Clinic, Provincial Laboratory of Public Health Southern Alberta

Studies Initiated/Ongoing:

1. Anonymous HIV Testing
Principal Investigator — Dr. B. Romanowski/ Mary Rafter
Sponsor — STD Research Fund, AIDS Network of Edmonton
Participation — Edmonton STD Clinic, CIU, Provincial Laboratory of Public Health Northern Alberta

2 Ongoing Evaluation of CSF Examination in Patients with Syphilis
Principal Investigator — Dr. B. Romanowski
Co-investigator — Ruth Sutherland
Participation — Provincial STD Program

3. Anonymous Unlinked HIV Seroprevalence Survey to Monitor Prevalence of HIV Among Patients Attending an STD Clinic
Principal Investigator — Dr. B. Romanowski
Sponsor — STD Research Fund, Provincial AIDS Program
Participation — CIU, Edmonton STD Clinic, Provincial Laboratory of Public Health Northern Alberta

4. Comparison of Single-dose Azithromycin Therapy to 7 Day Doxycycline Therapy in the Treatment of NGU and Chlamydial Cervicitis
Principal Investigator — Dr. B. Romanowski
Sponsor — Pfizer Pharmaceuticals
Participation — CIU, Edmonton STD Clinic

5. Comparison Combination Chemotherapy in Treatment of Mycobacterium avium complex (MAI) Bacteraemia in Acquired Immunodeficiency Syndrome (AIDS)
Principal Investigator — Dr. S. Shafran
Sponsor — Canadian HIV Trials Network
Participation — University of Alberta, Edmonton STD Clinic, CIU

6. Comparison of Retrovir (AZT) and Videx (DDI) versus Retrovir, Videx and Wellferon for the Treatment of HIV Infection
Principal Investigator — Dr. S. Houston
Sponsor — Burroughs Wellcome Inc
Participation — University of Alberta, Edmonton STD Clinic, CIU

7. Evaluation of Contact Tracing for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* for the areas covered by the Mobile Unit
Principal Investigator — Ruth Sutherland
Co-investigator — Kathleen Turner
Participation — Mobile Unit STD Services, Provincial STD Program

8. Canadian Women's HIV Study to Monitor Physical Health and Treatment of Females Living with HIV
Principal Investigator — Dr. C. Hankins
Participation — CIU, Edmonton STD Clinic, University of Alberta

9. Anonymous Unlinked HIV Seroprevalence Survey to Monitor Prevalence of HIV among Persons Attending STD Clinics
   Principal Investigator — Dr. B. Romanowski
   Sponsor — Division of HIV/AIDS Epidemiology, Bureau of Communicable Disease Epidemiology, Laboratory Centre for Disease Control, Ottawa
   Participation — CIU, Edmonton and Calgary STD Clinics, Provincial Laboratories of Public Health Northern and Southern Alberta

10. Famciclovir versus Acyclovir in HIV Positive Patients with Recurrent Herpes Simplex Infection
    Principal Investigator — Dr. B. Romanowski
    Sponsor — SmithKline Beecham Pharmaceuticals
    Participation — CIU, Edmonton STD Clinic, University of Alberta

11. Fluconazole versus Terconazole for the Treatment of Vaginal Candidiasis
    Principal Investigator — Dr. B. Romanowski
    Sponsor — Pfizer Pharmaceuticals
    Participation — CIU, Edmonton STD Clinic

Appendices

Appendices

■ Appendix 1: Cases of Notifiable Diseases by Age and Sex, Alberta, 1993

	<1		1–4		5–9		10–14		15–19		20–24		25–29		30–39		40–59		60+		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhea	0	0	0	1	1	0	0	11	92	179	123	131	77	45	93	28	40	7	1	0	0	2	831
Chlamydia	7	4	0	1	1	0	4	86	240	1654	474	1463	277	491	149	262	41	39	2	3	2	8	5208
NGU/MPC							5	15	273	304	737	335	532	179	631	159	212	45	25	2	53	17	3524
Chancroid																							0
Syphilis (Total)										1		4	6	2	6	8	15	6	13	13			74
Primary													1				1						2
Secondary															1								1
Early Latent												1			1		1						3
Late Latent										1		3	5	2	4	8	12	6	12	12			65
Neuro Syphilis																	1		1	1			3
Congenital																							0
Total	7	4	0	2	2	0	9	112	605	2138	1334	1933	892	717	879	457	304	97	41	18	55	27	9637

Gonorrhea Male 427 Female 404 | NGU/MPC Male 2468 Female 1056 | Syphilis Male 40 Female 34 | Chlamydia Male 1197 Female 4011

Appendices

■ Appendix 2: Cases of Confirmed *Neisseria gonorrhoeae* According to Reporting Agency by Age and Sex, Alberta, 1993

	<1		1–4		5–9		10–14		15–19		20–24		25–29		30–39		40–59		60+		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physicians					1			7	69	134	75	102	37	37	55	22	21	6	1			1	568
Edmonton Clinic								3	8	13	12	11	11	2	20	1	11						92
Calgary Clinic									4	17	12	6	14	1	5		3	1					63
Ft. McMurray Clinic									3	3	11	2	7	1	5		1						33
Positive Cultures				1				1	8	12	13	10	8	4	8	5	4					1	75
Total	0	0	0	1	1	0	0	11	92	179	123	131	77	45	93	28	40	7	1	0	0	2	831

■ Appendix 3: Cases of Confirmed *Chlamydia trachomatis* According to Reporting Agency by Age and Sex, Alberta, 1993

	<1		1–4		5–9		10–14		15–19		20–24		25–29		30–39		40–59		60+		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physicians	2				1		3	61	180	1400	318	1286	181	439	83	219	28	28	1	3	1	6	4240
Edmonton Clinic								6	18	56	48	35	26	20	13	5	6	2					235
Calgary Clinic								1	20	51	59	51	35	5	32	3	4	1					262
Ft. McMurray Clinic									8	10	9	7	3	3	3	2							45
Positive Cultures	5	4		1			1	18	14	137	40	84	32	24	18	33	3	8	1		1	2	426
Total	7	4	0	1	1	0	4	86	240	1654	474	1463	277	491	149	262	41	39	2	3	2	8	5208

■ Appendix 4: Cases of Non-gonococcal Urethritis/Mucopurulent Cervicitis According to Reporting Agency by Age and Sex, Alberta, 1993

	10–14		15–19		20–24		25–29		30–39		40–59		60+		Age N/S		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Physicians	5	10	158	151	360	145	191	75	220	52	57	14	6	1	53	17	1515
Edmonton Clinic			61	87	243	110	218	64	269	54	109	22	15	1			1253
Calgary Clinic		4	44	46	114	69	114	36	130	42	43	9	4				655
Ft. McMurray Clinic		1	10	20	20	11	9	4	12	11	3						101
Total	5	15	273	304	737	335	532	179	631	159	212	45	25	2	53	17	3524

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